



DRILL STEM TEST REPORT

Prepared For: **Ritchie Exploration Inc**

8100 East 22nd Street North Suite 700
P.O.Box 783188
Wichita, Kansas 67278-3188

ATTN: John Goldsmith

23-1s-36w Logan

Start Date: 2016.02.25 @ 05:05:00

End Date: 2016.02.25 @ 11:30:00

Job Ticket #: 01214 DST #: 1

Eagle Testers
1309 Patton Road Great Bend, Kansas 67530
620-791-7394

Printed: 2016.02.26 @ 00:17:45



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Test Start: 2016.02.25 @ 05:05:00

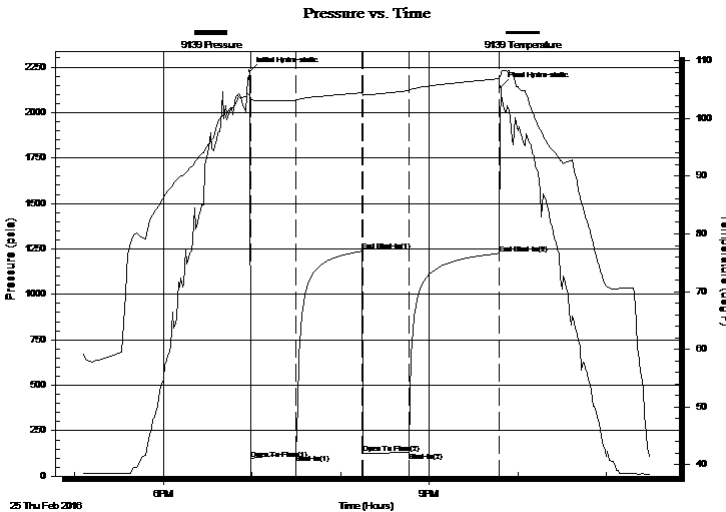
GENERAL INFORMATION:

Formation: **Kansas City H-I-J**
 Deviated: No Whipstock: ft (KB)
 Time Tool Opened: 07:00:00
 Time Test Ended: 11:30:00
 Interval: **4174.00 ft (KB) To 4242.00 ft (KB) (TVD)**
 Total Depth: 4242.00 ft (KB) (TVD)
 Hole Diameter: 7.88 inches Hole Condition: Fair
 Test Type: Conventional Bottom Hole (Initial)
 Tester: Gene Budig
 Unit No: 1
 Reference Elevations: 3258.00 ft (KB)
 3253.00 ft (CF)
 KB to GR/CF: 5.00 ft

Serial #: 9139 Outside
 Press@RunDepth: 1225.29 psia @ 4236.72 ft (KB) Capacity: 5000.00 psia
 Start Date: 2016.02.25 End Date: 2016.02.25 Last Calib.: 2016.02.26
 Start Time: 17:05:00 End Time: 23:30:30 Time On Btm: 2016.02.25 @ 18:58:30
 Time Off Btm: 2016.02.25 @ 21:48:30

TEST COMMENT: 1st Opening 30 MINUTES-Weak building blow built to 2 inches into the water
 1st Shut-IN 45 Minutes-No blow back
 2nd Opening 30 Minutes-Weak building blow built to 2 inches into the water
 2nd Shut-IN 60 Minutes- No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2227.08	104.19	Initial Hydro-static
1	95.38	103.45	Open To Flow (1)
32	121.42	103.15	Shut-In(1)
76	1237.29	104.47	End Shut-In(1)
77	123.33	104.01	Open To Flow (2)
108	132.28	104.83	Shut-In(2)
169	1225.29	106.89	End Shut-In(2)
170	2141.13	107.68	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	Drilling Mud	0.69

Gas Rates

Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)



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DST#: 1

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Formation: **Kansas City H-I-J**

Deviated: No Whipstock: ft (KB)

Time Tool Opened: 07:00:00

Time Test Ended: 11:30:00

Test Type: Conventional Bottom Hole (Initial)

Tester: Gene Budig

Unit No: 1

Interval: 4174.00 ft (KB) To 4242.00 ft (KB) (TVD)

Reference Elevations: 3258.00 ft (KB)

Total Depth: 4242.00 ft (KB) (TVD)

3253.00 ft (CF)

Hole Diameter: 7.88 inches Hole Condition: Fair

KB to GR/CF: 5.00 ft

Serial #: 9119

Inside

Press@RunDepth: 1225.91 psia @ 4236.72 ft (KB)

Capacity: 5000.00 psia

Start Date: 2016.02.25

End Date:

2016.02.25

Last Calib.:

2016.02.26

Start Time: 17:05:00

End Time:

23:30:30

Time On Btm:

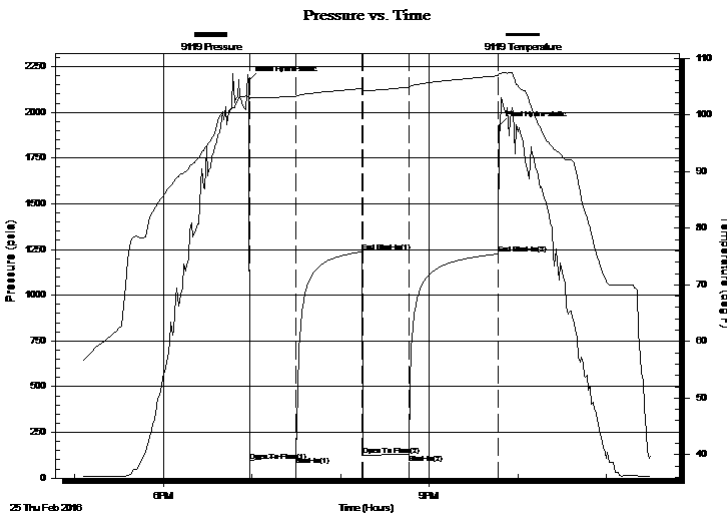
2016.02.25 @ 18:58:00

Time Off Btm:

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2nd Shut-IN 60 Minutes- No blow back

PRESSURE SUMMARY



Time (Min.)	Pressure (psia)	Temp (deg F)	Annotation
0	2173.32	103.46	Initial Hydro-static
1	93.40	102.89	Open To Flow (1)
32	121.12	103.25	Shut-In(1)
77	1236.55	104.66	End Shut-In(1)
77	123.91	104.37	Open To Flow (2)
108	132.70	104.91	Shut-In(2)
169	1225.91	106.92	End Shut-In(2)
170	1923.92	107.32	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
125.00	Drilling Mud	0.69

Gas Rates

	Choke (inches)	Pressure (psia)	Gas Rate (Mcf/d)



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TOOL DIAGRAM

Ritchie Exploration Inc

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DST#: 1

Test Start: 2016.02.25 @ 05:05:00

Tool Information

Drill Pipe:	Length: 4045.00 ft	Diameter: 3.80 inches	Volume: 56.74 bbl	Tool Weight: 2000.00 lb
Heavy Wt. Pipe:	Length: 0.00 ft	Diameter: 0.00 inches	Volume: 0.00 bbl	Weight set on Packer: 20000.00 lb
Drill Collar:	Length: 117.00 ft	Diameter: 2.25 inches	Volume: 0.58 bbl	Weight to Pull Loose: 70000.00 lb
			Total Volume: 57.32 bbl	Tool Chased 0.00 ft
Drill Pipe Above KB:	17.00 ft			String Weight: Initial 64000.00 lb
Depth to Top Packer:	4174.00 ft			Final 64000.00 lb
Depth to Bottom Packer:	ft			
Interval between Packers:	67.72 ft			
Tool Length:	96.72 ft			
Number of Packers:	2	Diameter: 6.75 inches		

Tool Comments:

Tool Description

Tool Description	Length (ft)	Serial No.	Position	Depth (ft)	Accum. Lengths
Shut In Tool	5.00			4150.00	
Hydraulic tool	5.00			4155.00	
Jars	7.00			4162.00	
Safety Joint	2.00		Fluid	4164.00	
Top Packer	5.00			4169.00	
Packer	5.00			4174.00	29.00 Bottom Of Top Packer
Anchor	5.00			4179.00	
Change Over Sub	0.75			4179.75	
Drill Pipe	31.22			4210.97	
Change Over Sub	0.75			4211.72	
Anchor	25.00			4236.72	
Recorder	0.00	9119	Inside	4236.72	
Recorder	0.00	9139	Outside	4236.72	
Bullnose	5.00			4241.72	67.72 Anchor Tool

Total Tool Length: 96.72



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FLUID SUMMARY

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Mud and Cushion Information

Mud Type: Gel Chem
Mud Weight: 9.00 lb/gal
Viscosity: 59.00 sec/qt
Water Loss: 8.00 in³
Resistivity: ohm.m
Salinity: 6000.00 ppm
Filter Cake: 1.00 inches

Cushion Type:
Cushion Length: ft
Cushion Volume: bbl
Gas Cushion Type:
Gas Cushion Pressure: psia

Oil API: deg API
Water Salinity: ppm

Recovery Information

Recovery Table

Length ft	Description	Volume bbl
125.00	Drilling Mud	0.688

Total Length: 125.00 ft Total Volume: 0.688 bbl

Num Fluid Samples: 0

Num Gas Bombs: 0

Serial #:

Laboratory Name:

Laboratory Location:

Recovery Comments:

